

Atty. Docket No. YOR920030199US1

(590.110)

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Applicants and the undersigned are most grateful for the time and effort accorded the instant application by the Examiner. The Office is respectfully requested to reconsider the rejection present in the outstanding Office Action in light of the following remarks.

Claims 1-9 were pending in the instant application at the time of the outstanding Office Action. Of the claims pending in the instant application at the time of the outstanding Office Action, Claims 1, 5, and 9 are independent claims; the remaining claims are dependent claims. Claims 1-3, 5-7 and 9 have been rewritten. Thus, Claims 1-9 are currently pending.

Applicants are not conceding in this application the claims amended herein are not patentable over the art cited by the Examiner, as the present claim amendments are only for facilitating expeditious prosecution. Applicants respectfully reserve the right to pursue these and other claims in one or more continuations and/or divisional patent applications. Applicants specifically state no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Applicants wish to preface the following remarks by noting that the remarks submitted in the previous Amendment, dated December 6, 2006, are equally applicable here, and are incorporated by reference as if set forth fully herein.

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Objections to the Specification

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The Examiner has kindly pointed to certain informalities in the Specification of the instant application that need to be corrected. Applicants have rewritten portions of the Specification to address and correct these informalities. Applicants respectfully submit that the changes made by Applicants do not introduce new matter into the specification, as the changes amount to correcting obvious typographical errors. Therefore, Applicants respectfully request reconsideration and withdrawal of these objections.

Rejections under 35 U.S.C. § 101

Claims 1-9 stand rejected under 35 U.S.C. § 101 as being directed towards non-statutory subject matter. The independent claims had previously been amended to address this issue. In an effort to facilitate expeditious prosecution, Applicants have again amended the independent claims to address these rejections and submit the following remarks in order to clarify Applicants' presently claimed invention. Applicants respectfully request reconsideration and withdrawal of these rejections.

As an initial matter, the Examiner's position is unclear regarding the rejections under § 101. The Examiner states that the term "object" represents abstract data in the claims. *Office Action*, page 14. The Examiner also states that "[t]he claimed invention must be for a practical application []", which Applicants read as meaning there is not a practical application in the Examiner's view. *Office Action*, page 3. The Examiner also

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states that “[t]he invention could be for any number of many practical applications [].” *Id* at page 4.

Applicants respectfully request that the Examiner clarify whether the instantly claimed invention is directed to at least one practical application or not. Applicants further respectfully request that the Examiner clarify how the word “object”, which Applicants submit is a tangible thing (e.g. a protein sequence), is construed as “abstract data” in the claims. Applicants respectfully submit that the invention, as the Examiner admits, can be utilized for many practical applications, i.e. it produces a useful, concrete and tangible result in that it *classifies objects* based on their properties, using a novel and nonobvious method to, *inter alia*, select the best properties of the object to be provided to the classifier, thus reducing the burden encountered when deciding which properties, among many, to utilize in classifying objects contained in large data sets. *Specification*, page 5, lines 8-10. The useful, concrete and tangible *final result* is recited in the claim language “determining if the object belongs in the query based on the selected properties.” Claim 1. To further clarify that a result is obtained, Applicants have amended the independent claims to recited, *inter alia*, “obtaining a result yielded by the arrangement for determining if the object belongs in the query”. Claim 1.

Applicants respectfully submit that the Examiner’s actual concern is that the instant invention is not limited to *only one* application because the invention can classify many different types of objects (i.e. it can be put to practical use in many situations where object classification is desirable). *Office Action*, page 5. The Examiner makes this view

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manifest by stating “[t]he invention as claimed will preempt all practical applications of object[] classification.” *Id.* Applicants respectfully disagree.

As the Examiner is no doubt aware, the scope of the instant invention is defined by the claims. As above, even if an abstract idea is contained in the claims, which Applicants do not concede, the claims clearly limit the scope of the invention to a practical application, i.e. *a method of classifying objects*. Claim 1. Applicants clearly are not claiming all methods and machines capable of classifying objects, but are claiming only one particular method of classifying objects and one particular machine for employing that method. For example, other known methods of object classification, “including neural networks, neural-neighbor classifiers, axis parallel decision trees, and oblique decision trees” are not claimed. *Specification*, page 3, lines 7-8. Thus, the instantly claimed invention is not “preempting all practical applications of object[] classification”, *Office Action*, page 5, but rather the instantly claimed invention is directed to one method (i.e. the method in the instant claims) for achieving a practical result (i.e. object classification). The particular method of the instant claims is directed to “an improvement so as to have more accurate classifications.”

Applicants respectfully submit that the Examiner’s assertion that the instantly claimed invention can be utilized for the “classification of [anything]...that could be classified based on their properties” does not support the conclusion that “all practical application[s] of object[] classification” are preempted, nor the conclusion that there is “no [final result] achieved or [no]...useful, concrete and tangible result.” *Office Action*, page 5. Rather, one could choose to classify objects using any of the prior art methods

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rather than using the instantly claimed invention. That the instantly claimed invention may be applied to any number of *objects* does not mean that it does not have a practical application, nor does it mean that it preempts all practical applications within the field, nor does it mean that there is not a useful, concrete and tangible final result.

Applicants additionally note that claims 1-4 are directed towards a useful machine, i.e. one that classifies objects. As the Examiner is no doubt aware, "[i]f a claim defines a useful machine...by identifying the physical structure in terms of its hardware or hardware and software combination, it defines a statutory product." *MPEP* § 2106(IV)(B)(2)(a) (citing *In re Lowry*, 32 F.3d 1579, 1583 (Fed. Cir. 1994)). See also *MPEP* § 2106(IV)(B)(2)(b)(ii) (stating "a machine is statutory when the machine, as claimed, produces a concrete, tangible and useful result *and/or when a specific machine is being claimed*." (emphasis added) (internal citations omitted)). Applicants respectfully submit they are claiming a specific machine, clearly identifying its components, and that such claims are for statutory subject matter.

Moreover, in an effort solely aimed at facilitating expeditious prosecution, Applicants have amended independent claim 1 to recite, *inter alia*, "wherein the system utilizes *a processor*." Claim 1 (emphasis added). Applicants submit that such an amendment can leave no doubt as to what is being claimed, i.e. a machine. Applicants respectfully submit that a machine that classifies an object is a useful machine, being specifically claimed, and is statutory subject matter. Therefore, reconsideration and withdrawal of these rejections is therefore respectfully requested.

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With respect to claims 5-9, applicants have amended the claim language to recited, inter alia, "A computer implemented method...comprising...executing computer instructions to..." Claim 5. This language clearly limits the method of object classification to a computer implemented method. Thus, the instantly claimed invention does not preempt all methods of object classification, but merely claims a computer implemented method for object classification.

In summary, Applicants respectfully submit that the instantly claimed invention is directed to statutory subject matter in that it claims a system and method for classifying objects using a particularly useful, novel and nonobvious method of classification. Therefore, Applicants respectfully request reconsideration and withdrawal of these rejections.

Rejections under 35 U.S.C. § 112

Applicants respectfully submit that the rejections of claims 1-9 under § 112 should be withdrawn for the forgoing reasons addressing the § 101 rejections. Applicants respectfully submit that because the § 101 rejections should be withdrawn, the § 112 rejections should be withdrawn as well. Moreover, Applicants respectfully submit that the claims fully comply with the requirements of 35 U.S.C. § 112. The Examiner is respectfully reminded that there are numerous examples of how to practice the invention given in the Appendix of the Specification.

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Rejections under 35 U.S.C. § 102(b)

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Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Marshall,

Classification to Ordinal Categories using a Search Partition Methodology with an Application in Diabetes Screening, Statist. Med. 18, 2723-2735 (1999) (hereinafter "Marshall"). Applicants respectfully request reconsideration and withdrawal of these rejections because, as the Examiner is no doubt aware, at the very least, "[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under construction." *W.L. Gore & Associates, Inc. v. Garlock*, 721 F.2d 1540, 1554 (Fed. Cir. 1983); see also *In re Marshall*, 198 U.S.P.Q. 344, 346 (C.C.P.A. 1978).

In the outstanding Office Action the Examiner responded to Applicants' previous arguments, namely that there is no teaching that more than one form of output could be yielded and further that the formulation of the rules (necessarily yielding binary output) would manipulate the rules to yield that type of output, by stating that there was no mention of these limitations in the claims. *Office Action*, page 13. Applicants respectfully disagree in as much as the independent claims recited, *inter alia*, " wherein the query takes into account...a desired form of output." Claim 1.

Nonetheless, solely in an effort to facilitate expeditious prosecution of the instant application, Applicants have amended the independent claims to recite, *inter alia*, "wherein the query takes into account...a desired form of output, wherein the query is manipulated to produce different forms of output based on the desired form of output." Claim 1. This language is intended to clarify that classifiers "need not give simple yes/no

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answers – they can also give an estimate probability that an object belongs to each of the candidate classes.” *Specification*, page 2, lines 3-5. Thus, in contrast to Marshall, or any other art cited by the Examiner, the instantly claimed invention provides a method of finding an expression on the sets, which gives the form of the output, that best defines (optimizes) the object collection belonging to a known class, and is not necessarily bound to return binary results. *Id.*

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Solely in an effort to facilitate expeditious prosecution of the instant application, Applicants have further amended the independent claims to recited, *inter alia*,

wherein the query takes into account: properties that best define the query, wherein the properties that best define the query constitute a signature characteristic of an object collection that is known to belong to a particular class of interest, and further wherein the properties constituting a signature characteristic are determined utilizing an expression that best defines the object collection.

Claim 1. This language is intended to clarify that the instantly claimed invention is a novel and nonobvious improvement over the state of the art in that the invention provides a method for determining which of an object's measured properties, among many, should be utilized by the classifier in performing a classification. Nowhere is this method disclosed in Marshall. Therefore, Applicants respectfully request reconsideration and withdrawal of these rejections.

Request for Telephone Interview

Applicants respectfully request that, in the unlikely event that there are further issues with the instant application after the Examiner has considered this Amendment, the

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Examiner contact the Applicants' representative at the telephone number listed below.

Applicants respectfully submit that this is a particularly appropriate request in light of the prosecution history of this application, where there have been several Amendments submitted and a Request for Continued Examination has been granted.

In view of the foregoing, it is respectfully submitted that independent claims 1, 5, and 9 fully distinguish over the applied art and are thus are in condition for allowance.

By virtue of dependence from what are believed to be allowable independent claims, it is respectfully submitted that claims 2-4 and 6-8 are also presently allowable.

The "prior art made of record" has been reviewed. Applicants acknowledge that such prior art was not deemed by the Office to be sufficiently relevant as to have been applied against the claims of the instant application. To the extent that the Office may apply such prior art against the claims in the future, Applicants will be fully prepared to respond thereto.

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In summary, it is respectfully submitted that the instant application, including claims 1-9, is presently in condition for allowance. Notice to the effect is earnestly solicited. If there are any further issues in this application, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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